

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (currently amended): Communications apparatus comprising:
means (104), for receiving a modulated radio frequency signal;
at least one means (105) for down-converting a received modulated radio-frequency signal);
means (107) for digitising a down-converted signal; and
means (108) for exporting at least a part of the digitised modulated signal to a main processor in a personal computing device, the main processor being programmed to perform all required demodulation of the digitised modulated signal to obviate the need for a DSP.

Claim 2 (original): Communications apparatus as claimed in claim 1, wherein the means (108/1101) for exporting at least a part of the digitised modulated signal comprises means for connection (1138) to at least one bus (114) within the personal computing device.

Claim 3 (original): Communications apparatus as claimed in claim 2, wherein the means (108/1101) for exporting at least a part of the digitised modulated signal further comprises means (1103) for performing direct memory access with memory means located within the personal computing device.

Claim 4 (original): Communications apparatus as claimed in claim 1, wherein the means for exporting at least a part of the digitised modulated signal comprises means (1133) for dividing the signal with respect to time.

Claim 5 (original): Communications apparatus as claimed in claim 1, wherein the means (105/801) for down-converting a received modulated radio-frequency signal comprises means for generating an in-phase down converted signal (818/855) and a quadrature phase down-converted signal (817/856), and the means (107/1001) for digitising a down-converted signal comprises means for digitising the in-phase down converted signal (1012) and the quadrature phase down-converted signal (1011).

Claim 6 (original): Communications apparatus as claimed in claim 1, wherein the means (105/801) for down-converting a received modulated radio-frequency signal comprises means for generating a single down-converted signal (818/855).

Claim 7 (original): Communications apparatus as claimed in claim 6, wherein the means (105/801) for down-converting a received modulated radio-frequency signal are arranged to convert the frequency of the received modulated radio signal by less than the centre frequency of the signal minus half of the bandwidth of the signal.

Claim 8 (original): Communications apparatus as claimed in claim 1, further comprising means (1133) for altering the bandwidth of the received modulated radio-frequency signal.

Claim 9 (original): Communications apparatus as claimed in claim 1, further comprising means (808) for altering the centre frequency of the received modulated radio-frequency signal.

Claim 10 (original): Communications apparatus as claimed in claim 9, wherein the means (808) for altering the centre frequency of the received modulated radio-frequency signal comprise means for frequency-hopping.

Claim 11 (original): Communications apparatus as claimed in claim 1, further comprising means (832) for altering the amplitude of the down converted received modulated radio-frequency signal.

Claim 12 (previously presented): Communications apparatus as claimed in claim 8, wherein the means for altering the bandwidth (1133) further comprise means for responding to at least one command (912) from a personal computing device.

Claim 13 (original): Communications apparatus as claimed in claim 12, wherein the means for altering parameters further comprises means for comparing that at least one command with at least one predetermined permitted parameter and means responsive only to commands possessing permitted parameters.

Claim 14 (original): Communications apparatus as claimed in claim 13, further comprising means for altering the at least one permitted parameter in response to an encoded command from a personal computing device (109).

Claim 15 (previously presented): Communications apparatus as claimed in claim 1, wherein the apparatus is adapted for installation within the personal computing device (109).

Claim 16 (previously presented): Communications apparatus as claimed in claim 1, wherein the personal computing device comprising processing means and memory means which processing means are responsive to instructions stored in the memory means to demodulate the exported signal.

Claim 17 (original): Communications apparatus as claimed in claim 1, further comprising means (114) for importing a digital modulated signal from a personal computing device, means (110) for converting the digital modulated signal to an analogue signal, means (112) for up-converting the analogue signal to a radio frequency signal and means (101) for transmitting the radio frequency signal.

Claim 18 (currently amended): Communications apparatus comprising (a) means (114) for importing a digital modulated signal from a main processor in a personal computing device (109), all required modulation to generate the digital modulated signal having been performed by the main processor in the personal computing device to obviate the need for a DSP, (b) means (110) for converting the digital modulated signal to an analogue signal, (c) means (112) for up-converting the analogue signal to a radio frequency signal and (d) means (101) for transmitting the radio frequency signal.

Claim 19 (original): Communications apparatus as claimed in claim 18, wherein the means (108/1101) for importing at least a part of the digital modulated signal comprises means (1138) for connection to at least one bus (114) within the personal computing device.

Claim 20 (original): Communications apparatus as claimed in claim 19, wherein the means (108/1101) for importing at least a part of the digital modulated signal further comprises means (1103) for performing direct memory access with memory means located within the personal computing device.

Claim 21 (original): Communications apparatus as claimed in claim 18, wherein the means for importing at least a part of the digital modulated signal comprises means (1133) for assembling the signal with respect to time.

Claim 22 (original): Communications apparatus as claimed in claim 18, wherein the means (110) for converting the digital modulated signal to an analogue signal comprises means (1425) for converting an in-phase signal and a quadrature phase signal.

Claim 23 (currently amended): Communications apparatus as claimed in claim 22, wherein the means (112) for up-converting the analogue signal to a radio frequency signal comprises means responsive to ~~[[an]]~~ the in-phase signal and a quadrature phase signal.

Claim 24 (original): Communications apparatus as claimed in claim 18, wherein the means (112) for up-converting the analogue signal to a radio frequency signal comprises means responsive to a single analogue signal.

Claim 25 (original): Communications apparatus as claimed in claim 24, wherein the means (112) for up-converting the analogue signal to a radio frequency signal are arranged to alter the frequency of the analogue signal by less than a required transmission centre frequency of the signal minus half of the bandwidth of the signal.

Claim 26 (original): Communications apparatus as claimed in claim 18, further comprising means (111/1133) for controlling the bandwidth of the transmitted signal.

Claim 27 (original): Communications apparatus as claimed in claim 18, further comprising means (112) for altering the centre frequency of the transmitted signal.

Claim 28 (original): Communications apparatus as claimed in claim 27, wherein the means for altering the centre frequency of the transmitted signal comprises means for frequency-hopping.

Claim 29 (original): Communications apparatus as claimed in claim 18, further comprising means (113) for altering the amplitude of the transmitted signal.

Claim 30 (previously presented): Communications apparatus as claimed in claim 26, wherein the means (1133) for controlling the bandwidth further comprise means for receiving

at least one command from a personal computing device (109), means for comparing that at least one command with at least one predetermined permitted parameter and means responsive only to commands possessing permitted parameters.

Claim 31 (previously presented): Communications apparatus as claimed in claim 30, further comprising means (1133) for altering the at least one predetermined permitted parameter in response to an encoded command from a personal computing device.

Claim 32 (previously presented): Communications apparatus as claimed in claim 18, wherein the apparatus is adapted for installation within the personal computing device (109).

Claim 33 (previously presented): Communications apparatus as claimed in claim 18, wherein the personal computing device comprising processing means and memory means which processing means are responsive to instructions stored in the memory means to demodulate the exported signal.

Claim 34 (new): A communications device, comprising:

- means for receiving a modulated radio-frequency signal;
- means for down-converting said received modulated radio-frequency signal to a modulated intermediate-frequency signal;
- means for digitising said modulated intermediate-frequency signal;
- means exporting said digitised, modulated intermediate-frequency signal to a main processor in a personal computing device; and
- software means, operating on said main processor of said personal computing device, comprising instructions for performing all aspects of handling said digitised, modulated intermediate-frequency signal in order to demodulate said digitised, modulated intermediate-frequency signal.

Claim 35 (new): The device of claim 34 wherein said software means operating on said main processor, comprises instructions for transcoding said digitised, modulated intermediate-frequency signal to produce an audio frequency signal.

Claim 36 (new): The device of claim 35 wherein said software means operating on said main processor, further comprises instructions for decoding said audio frequency signal to produce a binary digital signal.

Claim 37 (new): The device of claim 36 wherein said instructions for transcoding comprise instructions for demodulating a COFDM signal; and wherein said instructions for decoding comprise instructions for decoding a QAM encoded signal.